

Final Estimate for 2019 of
Spring Harvest of Coastal Migrant Striped Bass in Chesapeake Bay

Prepared by
Jeffrey Horne

Maryland Department of Natural Resources
Fishing and Boating Services
Annapolis, MD

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INTRODUCTION

This report presents the final estimates of the 2019 Maryland and Virginia spring harvest of coastal migrant striped bass in Chesapeake Bay (Table 1). The method used to determine coastal migrants in Maryland was presented in detail in Jones (2003), Barker and Sharov (2004), and Sharov et al. (2005). This report is submitted yearly to the Atlantic States Marine Fisheries Commission (ASMFC) as an appendix to the annual compliance reporting, and as an appendix to the recreational fishing section of the Chesapeake Bay Finfish Investigations Federal Aid Report to the U. S. Fish and Wildlife Service (USFWS).

ASMFC implemented Addendum IV to the Striped Bass Management Plan in 2014 in order to reduce fishing mortality to a level at or below the target. Addendum IV manages the trophy season as part of the coastal fishery and requires a 25% reduction in harvest. Therefore, Maryland has managed the trophy fishery with a minimum size limit of 35 inches. Addendum IV also required a Chesapeake Bay reduction of 20.5% in the summer/fall fishery. The regulations were two fish \geq 19 inches (only one over 28 inches) from May 16 to December 15th.

METHODS

Estimation of harvest

Maryland Department of Natural Resources (DNR) charter boat logbook reports provided the census values of daily charter boat harvest in numbers of fish (Table 1). Due to increased online reporting of charter boat logbook data, Standard Atlantic Fisheries Information System (SAFIS) data were also used for the charter calculation. The NOAA Marine Recreational Information Program (MRIP) survey provided final estimates of harvest for Maryland private and rental boats, in numbers of fish, for Wave 2 (March/April) and Wave 3 (May/June; Table 1).

The Virginia Marine Resources Commission (VMRC) provided mandatory spring season striped bass reporting data.

Harvest apportioned by time

The migrant harvest season overlaps parts of both Waves 2 and 3 of the MRIP survey. Length distribution of the harvest is known to change over this time period, so total harvest was apportioned into 2-week intervals between April 20 and June 15. All Wave 2 landings for striped bass occurred in the last 2 weeks of the wave. The 2-week interval proportions for Wave 3 landings were developed as the proportions of the harvest recorded in the Maryland charter boat logbook and SAFIS reports (Table 1). Total Maryland striped bass harvest per interval was calculated as the sum of charter boat harvest (DNR) and private and rental harvest (MRIP; Table 1).

Harvest apportioned by length

Data from the DNR Volunteer Charter Boat Survey and Charter Creel Survey were used to develop the length frequency distribution of the Maryland charter boat catch for each 2-week interval (Table 2). Data from the Volunteer Charter Boat Survey were also used to develop the length frequency distribution for the Maryland private angler catch due to small samples of fish reported in the Volunteer Angler Survey. Harvest in each interval was distributed by the length frequency distribution for each 2-week interval. The number of migrants harvested in Maryland during the spring trophy season was determined by applying length-specific migration probabilities. These probabilities were derived from the estimate of the number of striped bass tagged on the spawning grounds in Maryland that migrate to the Atlantic coast before December of the first year at large (Dorazio et al. 1994). The result was a migrant and resident harvest estimate for each 2-week interval, distributed among interval-specific length groups (Table 3).

The total 2019 Maryland spring harvest of coastal migrant striped bass in Chesapeake Bay was calculated as the sum of migrants over all length groups and 2-week intervals from both sectors (charter and private). The 2019 spring migrant season in Virginia was closed to harvest.

RESULTS AND DISCUSSION

DNR charter boat estimates of harvest were queried on 1/13/2020. The total charter boat harvest was 355 fish from April 20 to April 30, 347 fish from May 1 to May 15, 4,651 fish from May 16 to May 31 and 5,432 fish from June 1 to June 15. Final MRIP private and rental boat estimates were downloaded on 5/26/2020. Private and rental boat total harvest was 10,561 fish from April 20 to April 30, 1,433 fish from May 1 to May 15, 19,213 fish from May 16 to May 31 and 22,440 fish from June 1 to June 15 (Table 1).

The final estimate of the 2019 Chesapeake Bay spring migrant harvest is 13,633 fish, a 20.7% decrease from 2018 and below the 2006-2019 average of 39,036 fish (Table 4). The Maryland portion of the Chesapeake Bay migrant harvest is 13,633 migrants (Table 1). The Maryland charter boat migrant harvest is 937 fish. The Maryland private boat migrant harvest is 12,696 fish. The estimate of the spring 2019 migrant harvest in Virginia is 0 fish (season closed). Annual spring migrant harvest by length group was bimodal compared to 2016-2018 (Figure 1). As required by ASMFC Addendum IV, an increased minimum size limit of 35 inches for April 20 to May 15 and a minimum size of 19 inches for May 16 to December 15 was in place during 2019. The length frequency distribution derived from the Volunteer Charter Boat Survey data reflected this change in regulations (Table 2, Figure 1).

REFERENCES

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Table 1. 2019 Chesapeake Bay spring striped bass migrant harvest, distributed among 2-week intervals, based on data from Maryland charter boat logbook reports, MRIP Maryland recreational harvest estimate and VA calculated migrant harvest.* Shaded time intervals outside of the April 20th to June 15th season are shown to demonstrate partitioning of the total harvest.

	Interval	Charter Harvest (% by interval) ¹	MD Charter Harvest ¹	MD Private Harvest ²	MD Total Harvest	MD Charter Migrants	MD Private Migrants	MD Total Migrants	VA Migrants ³	Bay Total Migrants		
Wave 2	Apr 1-19	0	0	0	0	0	0	0				
	Apr 20-30	100	355	10,561	10,916	345	10,254	10,599				
Wave 3	May 1-15	2	347	1,433	1,780	332	1,372	1,704				
	May 16-31	25	4,651	19,213	23,864	82	337	419				
	June 1-15	29	5,432	22,440	27,872	178	733	911				
	June 16-30	45	8,549	35,316	43,865							
	<i>Wave 3 total</i>	<i>100</i>	<i>18,979</i>	<i>78,402</i>	<i>97,381</i>							
Season total (Apr 20 – June 15)			10,785	53,647	64,432	937	12,696	13,633			0	13,633

* – Numbers may not sum due to rounding

1 – Data from MD DNR charter logbooks and SAFIS (1/13/2020)

2 – Data from MRIP (retrieved from NOAA NMFS website 5/26/2020)

3 – Data from VMRC (spring 2019 season closed)

Table 2. Length distribution, in inches, of the 2019 Maryland striped bass spring season harvest as voluntarily reported by charter boat captains by 2-week intervals between April 20 and June 15. Shaded areas represent no-take size groups.

Length Group	April 20-30	May 1-15	May 16-31	June 1-15	Total
17	0	0	0	0	0
18	0	0	0	0	0
19	0	0	58	128	186
20	0	0	65	113	178
21	0	0	79	76	155
22	0	0	55	84	139
23	0	0	34	53	87
24	0	0	37	57	94
25	0	0	14	19	33
26	0	0	13	30	43
27	0	0	8	20	28
28	0	0	3	11	14
29	0	0	2	14	16
30	0	0	3	6	9
31	0	0	1	4	5
32	0	0	1	2	3
33	0	0	0	4	4
34	0	0	0	1	1
35	0	2	0	1	3
36	2	0	0	1	3
37	1	3	0	0	4
38	8	3	0	0	11
39	7	7	0	0	14
40	1	2	0	0	3
41	5	6	0	0	11
42	7	1	0	0	8
43	4	1	0	0	5
44	1	1	0	0	2
45	0	0	0	0	0
46	0	0	0	0	0
47	2	0	0	0	2
48	0	0	0	0	0
49	0	0	0	0	0
50	0	0	0	0	0
51	0	0	0	0	0
52	0	0	0	0	0
53	0	0	0	0	0
54	0	0	0	0	0
55	0	0	0	0	0
56	0	0	0	0	0
n	38	26	373	624	1061

Table 3. 2019 Maryland spring striped bass migrant harvest, distributed among 1 inch length groups (length as total length).*

Length Group	Apr 20-30			May 1-15		
	Charter	Private	Total	Charter	Private	Total
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	0	0	0	0
22	0	0	0	0	0	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0
25	0	0	0	0	0	0
26	0	0	0	0	0	0
27	0	0	0	0	0	0
28	0	0	0	0	0	0
29	0	0	0	0	0	0
30	0	0	0	0	0	0
31	0	0	0	0	0	0
32	0	0	0	0	0	0
33	0	0	0	0	0	0
34	0	0	0	0	0	0
35	0	0	0	22	90	112
36	16	488	504	0	0	0
37	9	256	264	37	152	189
38	71	2,111	2,182	38	157	195
39	63	1,884	1,947	90	374	464
40	9	272	282	26	108	134
41	46	1,373	1,419	79	327	406
42	65	1,931	1,996	13	55	68
43	37	1,106	1,144	13	55	68
44	9	277	286	13	55	68
45	0	0	0	0	0	0
46	0	0	0	0	0	0
47	19	556	575	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	0	0	0	0	0	0
n	345	10,254	10,599	332	1,372	1,704

*Note: numbers may not sum due to rounding.

Table 3. 2019 Maryland spring striped bass migrant harvest, distributed among 1 inch length groups (length as total length).* Continued.

Length Group	May 16-31			June 1-15		
	Charter	Private	Total	Charter	Private	Total
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	2	10	13	3	12	15
21	5	20	25	3	13	17
22	5	23	28	6	24	30
23	5	22	28	6	24	30
24	10	39	49	10	42	53
25	6	24	30	5	23	28
26	9	35	44	14	57	71
27	8	34	43	14	60	74
28	5	20	25	12	51	63
29	5	20	25	24	97	121
30	10	43	54	15	60	75
31	5	20	25	13	56	69
32	6	26	32	9	36	45
33	0	0	0	22	90	112
34	0	0	0	6	26	33
35	0	0	0	7	29	36
36	0	0	0	8	32	39
37	0	0	0	0	0	0
38	0	0	0	0	0	0
39	0	0	0	0	0	0
40	0	0	0	0	0	0
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	0	0	0	0
44	0	0	0	0	0	0
45	0	0	0	0	0	0
46	0	0	0	0	0	0
47	0	0	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
54	0	0	0	0	0	0
55	0	0	0	0	0	0
56	0	0	0	0	0	0
n	82	337	419	178	733	911

*Note: numbers may not sum due to rounding.

Table 4. Harvest of migrant striped bass in the spring fishery from 1992-2019 (Individual estimates not available for all sectors prior to 2006). Average was only calculated for 2006-2019 due to techniques used to calculate migrant harvest.

Year	MD Charter Migrant Harvest	MD Private Migrant Harvest	VA Migrant Harvest	Total Migrant Harvest
1992				1,013
1993				2,719
1994				3,672
1995				42,634
1996				11,613
1997				21,222
1998				10,021
1999				17,051
2000				26,748
2001				25,728
2002				14,839
2003	43,248		242	43,900
2004	31,218		186	31,404
2005	64,345		1,319	65,664
2006	15,570	47,878	4,323	67,771
2007	9,359	26,229	740	36,328
2008	13,106	22,785	275	36,166
2009	12,740	77,799	243	90,782
2010	12,504	7,261	82	19,847
2011	13,673	22,616	145	36,434
2012	9,335	8,796	77	18,208
2013	13,724	34,810	23	48,557
2014	12,311	26,599	11	38,921
2015	5,771	24,725	37	30,533
2016	9,524	64,615	169	74,308
2017	4,370	18,483	39	22,892
2018	2,867	14,237	94	17,198
2019	937	12,696	0	13,633
Avg (2006-19)	9,699	28,889	447	39,036

Figure 1. Comparison of Maryland's 2016 through 2019 spring striped bass migrant harvests, apportioned by length.

